

Eremophila woodiae Edginton (Scrophulariaceae), a new species from Queensland

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Summary

Edginton, M.A. (2015). *Eremophila woodiae* Edginton (Scrophulariaceae), a new species from Queensland. *Austrobaileya* 9(3): 408–415. *Eremophila woodiae* is described and illustrated. Notes on ecology, distribution and conservation status are provided. The known distribution of the new species is restricted to the vicinity of Vergemont Station and Opalton in western central Queensland. A conservation status of Least Concern is recommended.

Key Words: Scrophulariaceae, Myoporaceae, *Eremophila*, *Eremophila woodiae*, new species, taxonomy, conservation status, Vergemont Station, Opalton

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Introduction

Eremophila R.Br. is a genus of 215 species and is endemic to Australia (Chinnock 2007). The genus is widespread throughout the arid areas of the continent (although some species do occur outside arid areas, albeit less commonly) with the majority of species restricted to Western Australia. Until recently, *Eremophila* was considered to be part of the family Myoporaceae, a southern hemisphere family. A review by Tank *et al.* (2006) based on molecular studies supported the inclusion of the traditional Myoporaceae within the Scrophulariaceae, an inclusion which has now been accepted at BRI and elsewhere.

A new species of *Eremophila*, restricted to western central Queensland, is described in this paper. Herbarium material was first collected in 1986 by Neldner and Nicholson, then in 1987 by Mitchell.

Material and methods

This study is based upon the examination of dried herbarium material and label data from the Queensland Herbarium. All existing specimens were examined. No spirit material had been collected, although parts rehydrated

to facilitate drawing have subsequently been put into spirit. Unless stated otherwise all photographs were taken by the author.

Taxonomy

***Eremophila woodiae* Edginton sp. nov.**
Typus: Queensland. GREGORY NORTH DISTRICT: Vergemont, W of Longreach, 1 September 2013, R. Fensham 6372 (holo: BRI).

Eremophila sp. (Opalton V.J. Neldner+ 2619); Edginton (2014).

Small shrub to 0.5 metres; **branches** terete, often exhibiting remaining basal portions of leaves, resinous on new growth, becoming non-resinous with age, non-tuberculate, red-brown to yellow, becoming grey with age; indumentum on new branches, leaves, petioles, pedicels and sepals moderately dense with sessile and short spreading colourless glandular hairs 0.1–0.4 mm long, and longer villous glandular and eglandular colourless hairs 0.6–1.1 mm long, branches glabrescent. **Leaves** spirally arranged, densely crowded towards the branch tips, spreading to ascending, linear-lanceolate, conduplicate in distal three-quarters and flattened below, 12–22 mm long, 1.5–3 mm long, resinous, mid to dark green; margins mainly entire apart from distinct lobing towards apex with 3–5 lobes per margin directed upwards, apex obtuse to sub-acute; base narrowing to a petiole-like

section 0.5–1 mm long formed by the central vein. **Flowers** 1 per axil; pedicels semi-terete, 1–2 mm long, dark red-brown to yellow in dried specimens, becoming grey with age. **Sepals** 5, slightly imbricate, 12–14.5 mm long, resinous, acute; differentiated into 1 posterior, 2 anterior and two inner ones; posterior sepal ovate-lanceolate, 5–6 mm wide; anterior sepals broadly triangular-lanceolate, 3–4 mm wide; inner sepals triangular-lanceolate, 2–3 mm wide. **Corolla** \pm zygomorphic, bilabiate, 14–19 mm long, violet to light purple, unspotted; tube 11–14 mm long, bulbous at base, slightly constricted above and then dilating gradually distally; upper lip 4–5 mm long, 2 lobed, lobes obtuse, divided for $c. \frac{1}{10}$ of length; lower lip 4–5 mm long, 3-lobed, the lobes divided for most of their length, medial one obtuse, slightly longer and broader than the lateral ones which are obtuse to subacute; outer surface of upper tube and lobes sparsely to moderately villous, hairs colourless, eglandular, constriction and lowermost part of tube glabrous; inner surface of lobes glabrous; tube prominently woolly in throat just below lobes of upper lip, otherwise villous in upper part, glabrous in lower part, hairs eglandular. **Stamens** 4; anthers 2–2.5 mm long, lower 2 enclosed, upper two barely exerted from throat, glabrous; filaments sparsely villous with white eglandular hairs near base, glabrous above; **ovary** conical-ovoid, slightly to moderately laterally compressed, 2–3 mm long, 1–1.5 mm wide, glabrous, 4-locular; 3 ovules per locule; style $c. 10$ mm, sparsely villous with white eglandular hairs. **Fruit** (mature) ovate-conical, $5-8 \times 3.5-5.5$ mm, exocarp papery, whitish, glabrous; endocarp woody, slightly compressed, subreticulately ribbed distally, red-brown; immature fruit enclosed by sepals. **Figs. 1–5.**

Additional specimens examined: **Queensland.** GREGORY NORTH DISTRICT: 18 km SW of Opalton, Nov 1986, *Neldner 2619 & Nicholson* (BRI). MITCHELL DISTRICT: 25 km SW of Vergemont Station, W of Longreach, Sep 1989, *Mitchell 463* (BRI); Vergemont Station, May 2011, *Fensham 6101 & Silcock* (BRI); Vergemont Station, W of Longreach, Sep 2013, *Fensham 6376* (BRI), *6379* (BRI), *6380* (BRI).

Distribution and habitat: *Eremophila woodiae* is endemic to western central Queensland, in the vicinity of Opalton and

Vergemont Stations west of Longreach and south of Winton (**Map 1**).

The species occurs on barren plateaux, especially near the edges, in skeletal soil with sparse, stunted shrubland. There is one record from the base of a jump-up in “boree (*Acacia tephрина*) and spinifex (*Triodia* sp./spp.) flats” (*Neldner 2619 & Nicholson*). Associated species commonly include *Acacia shirleyi* Maiden, *A. catenulata* C.T.White, *A. sibirica* S.Moore, *Corymbia blakei* K.D.Hill & L.A.S.Johnson, *Eremophila latrobei* F.Muell., *Hakea collina* C.T.White, *Triodia longiceps* J.M.Black and *T. pungens* R.Br. (Silcock & Fensham 2014; Queensland Herbarium HERBRECS data 2015).

Phenology: The specimens collected indicate that flowering and fruiting occurs between May to November.

Affinities: *Eremophila woodiae* bears a superficial resemblance to *E. hispida* Chinnock, which has a known distribution which is close to, but does not quite overlap, that of *E. woodiae*. Both taxa are low shrubs with leaves which appear linear when viewed without a microscope, and both species have violet to purple flowers 15–20 mm long. *Eremophila woodiae* has leaves which are linear-lanceolate when viewed microscopically (linear on *E. hispida*); very crowded leaves (not crowded on *E. hispida*), simple hairs only on all parts (simple hairs, with or without some stellate hairs on branchlets, leaves and sepals on *E. hispida*), and the top $\frac{1}{4}$ to $\frac{1}{2}$ of each leaf has lobes (entire leaves on *E. hispida*). Despite the superficial resemblance, *E. woodiae* and *E. hispida* are unlikely to be close relations.

Eremophila woodiae can be classified in *Eremophila* section *Eremaeae* Chinnock based on the species description (Chinnock pers. comm., July 2015). Chinnock further stated that the corolla was interesting and appeared slightly different (based on the single image of a flower seen) in having two obtuse upper lobes; however, as there can be variation in the size of the flowers and the arrangement of the lower lobes in species of this section more flowers from different



Fig. 1. Holotype of *Eremophila woodiae* (Fensham 6372, BRI).

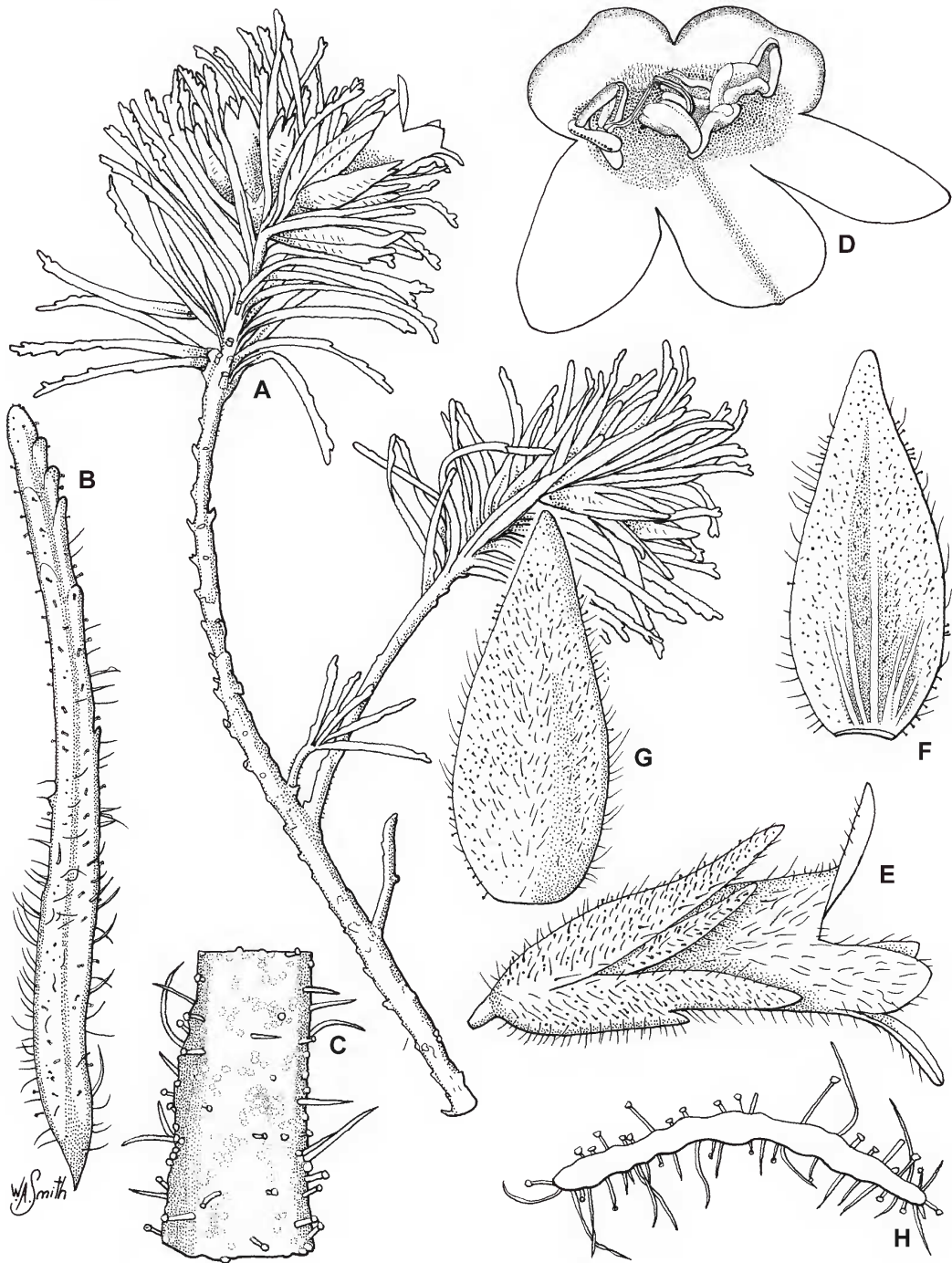


Fig. 2. *Eremophila woodiae*. A. branching habit $\times 2$. B. leaf $\times 8$. C. close-up of leaf showing glandular and eglandular hairs $\times 24$. D. front view of corolla $\times 6$. E. side view of calyx and corolla $\times 4$. F & G. inner and outer surfaces of posterior sepal $\times 4$. H. cross-section of posterior sepal showing glandular and eglandular hairs $\times 16$. All from *Fensham 6379* (BRI). Del. W. Smith.



Fig. 3. Flower, branch and leaves of *Eremophila woodiae* at Vergemont Station. Photo: R. Fensham.

populations may show greater variation. Otherwise all other aspects of the species fall well within the boundaries of *Eremophila* section *Eremaeae*. It may be related to *E. goodwinii* F.Muell. because of the glandular indumentum, although unlike this species it does not have the banding on the inside lateral walls of the corolla (Chinnock pers. comm., July 2015).

Notes: In one collection of *Eremophila woodiae* (Mitchell 463), a flower with 6 sepals was noted (**Fig. 5**). All other flowers examined during this study had 5 sepals so it is presumed that 6 sepals is a rare exception.

None of the fruits observed had completely shed the exocarp – though some had shed most of it; consequently it is possible that none of the fruits were completely mature.

Therefore 1 mm was added arbitrarily to the highest measured values for length and width, and these augmented values were used as the high end of the ranges for length and width.

Conservation status: The species known range is very restricted; however, it is locally common in places. A species profile (as *Eremophila* sp. (Opalton V.J. Neldner+2619) by Silcock & Fensham (2014) found that this species occurred on 6 of 10 plateaux surveyed in the overall area of distribution. Population sizes on each of these plateaux varied from 1000 to 4000 plants, with a total of about 17000 plants found. Ninety km² of similar plateaux were mapped in its known range, and of this 5 km² was surveyed. It was estimated that the total population based on known occurrences is approximately 300,000 individuals. However, Silcock & Fensham

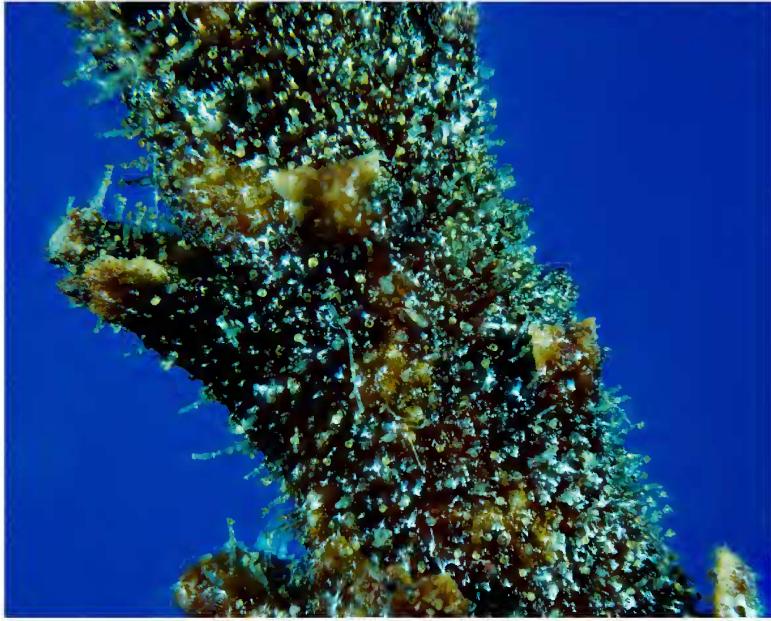


Fig. 4. Branch portion of *Eremophila woodiae* showing raised persistent leaf base remnants and glandular and eglandular hairs.



Fig. 5. Six-sepal flower of *Eremophila woodiae* (Mitchell 463, BRI).

(2014) concluded that there is a lot of suitable habitat to the west and south of its known range, so the total population may be higher than 300,000.

The habitat in which *Eremophila woodiae* occurs is without domestic stock and has low feral goat numbers; conversely grazing by native animals is thought to be very low. No evidence of grazing on the species was observed. Silcock & Fensham (2014) concluded that there are no threats to this species, that it is abundant within its limited range and that there are no observable fluctuations in the number of plants over the short term. They ascertained that the species is not eligible for listing under any IUCN criteria. Therefore a **Least Concern** conservation status under the *Queensland Nature Conservation Act 1992* is recommended.

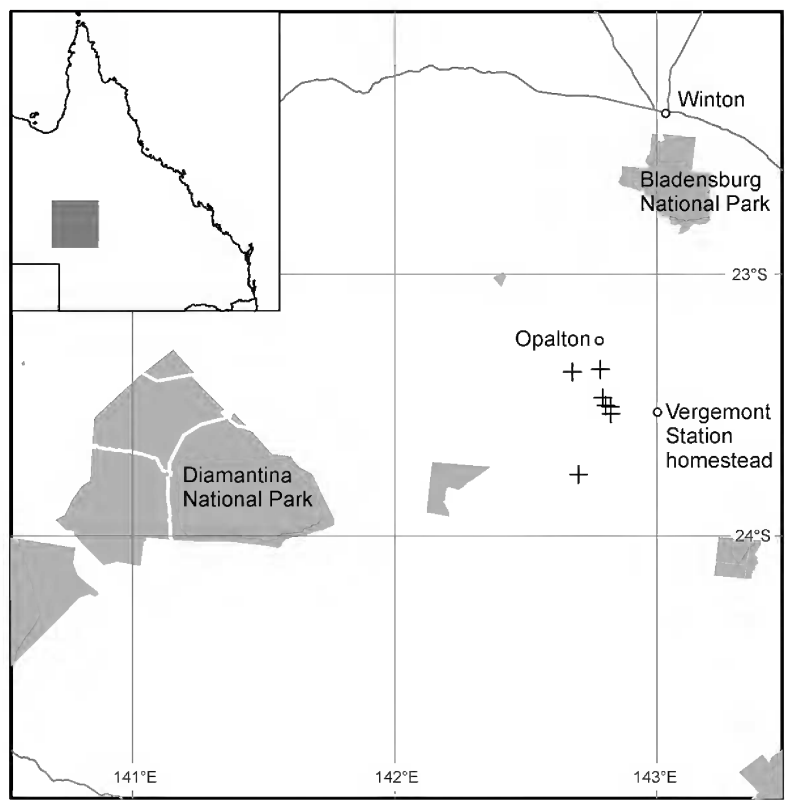
Etymology: The specific epithet of this species is named for Aileen Wood, a long term staff member at the Queensland Herbarium. Aileen's knowledge of cultivated plants, especially cultivars, is unsurpassed at the Queensland Herbarium and is greatly appreciated by staff.

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References

- CHINNOCK, R. (2007). *Eremophila and Allied Genera: A Monograph of the plant family Myoporaceae*. Rosenberg Publishing: Sydney.
- EDGINTON, M.A. (2014). Scrophulariaceae. In P.D. Bostock & A.E. Holland (eds.) (2014). *Census of the Queensland Flora 2014*. Queensland Department of Science, Information Technology and Innovation: Brisbane. <https://www.qld.gov.au/environment/assets/documents/plants-animals/herbarium/qld-flora-census.pdf>, accessed 1 December 2014.
- SILCOCK, J. & FENSHAM, R. (2014). *Eremophila* sp. (Opalton V.J. Neldner+ 2619) species profile. Unpublished.
- TANK, D.C., BEARDSLEY, P.M., KELCHER, S.A. & OLMSTEAD, R.G. (2006). L.A.S. Johnson Review No. 7. Review of the Systematics of Scrophulariaceae *s.l.* and their current disposition. *Australian Systematic Botany* 19: 289–307.



Map 1. Distribution of *Eremophila woodiae*, grey shaded areas are conservation reserves.